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First Quarter 2006
Discharge Report for the
Vapor Extraction System Located at

A&M Mini Mart

440 Hearn Avenue

Santa Rosa, California

April 7, 2006

Project 2433

Prepared for

Mr. Michael M. Gholami
A&M Mini Mart
440 Hearn Avenue
Santa Rosa, California 95407

Prepared by

SOMA Environmental Engineering, Inc.
6620 Owens Drive, Suite A
Pleasanton, California 94588

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Mr. Robert Cave
Bay Area Air Quality Management District
939 Ellis Street
San Francisco, California 94109

Re: First Quarter 2006 Discharge Report for the Vapor Extraction System at A&M Mini-Mart, 440 Hearn Avenue, Santa Rosa, California

Dear Mr. Cave:

Due to the rainy conditions encountered during the last three months (January 2006 through March 2006), the soil vapor extraction remedial system was temporarily inoperable. During rainy periods of the year the water table ascends towards the ground surface. This reduces the air pore space within the unsaturated region and causes flooding within this zone, as well as within the wells. Therefore, a reduced region of the unsaturated zone occurs. When conducting vapor extraction within the unsaturated zone, the flooded conditions can cause damage to the remedial equipment. The I.C. Engine was designed for extracting mostly unsaturated vapors and not saturated liquids.

The treatment system was started on June 22, 2005. SOMA oversaw the source test on the system conducted by CEECON, SOMA's subcontractor. The test was run for three consecutive days: from June 22, 2005 to June 24, 2005. The results of this test are detailed in CEECON's "Source Test Report," dated July 1, 2005.

The site vicinity map is presented in Figure 1. The location of the soil vapor extraction system is shown in Figure 2. The diagram of the soil vapor extraction system is shown in Figure 3. The BAAQMD permit is shown in Appendix A.

SOMA will provide further remedial information once the I.C. Engine has been re-started. As of December 5, 2005, approximately 290.78 pounds of petroleum hydrocarbons have been removed from the vadose zone beneath the site; 3.79 pounds of benzene has also been removed.

Thank you for taking the time to review this matter. Meanwhile, please do not hesitate to call Mr. Tony Perini, Senior Project Engineer, or myself at (925) 734-6400, if you have any questions or comments.

Sincerely,

Mansour Sepehr, Ph.D., P.E.
Principal Hydrogeologist

Attachments

Figures

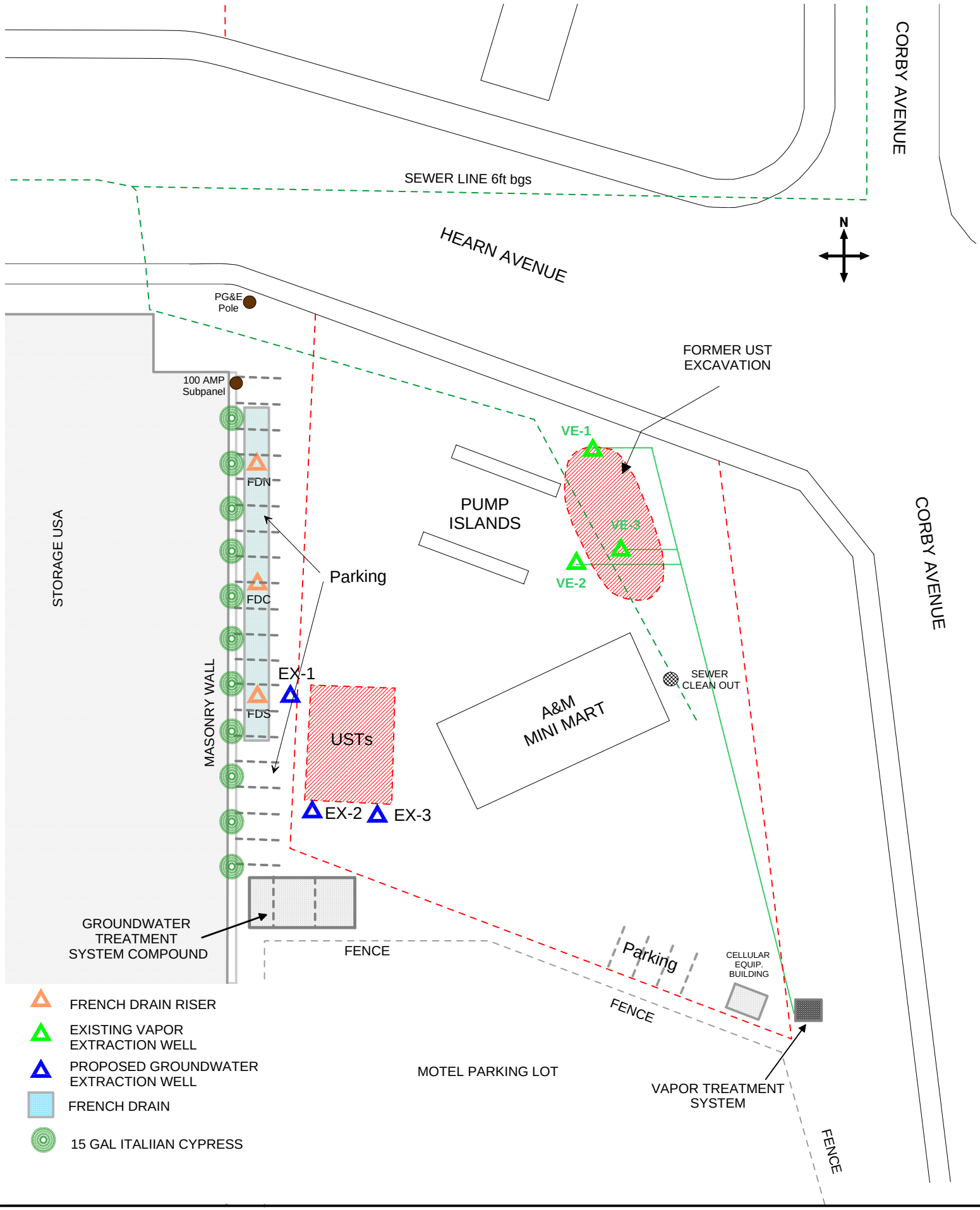
N

approximate scale in feet

0 200 400

Figure 1: Site vicinity map.

SOMA ENVIRONMENTAL ENGINEERING, INC.

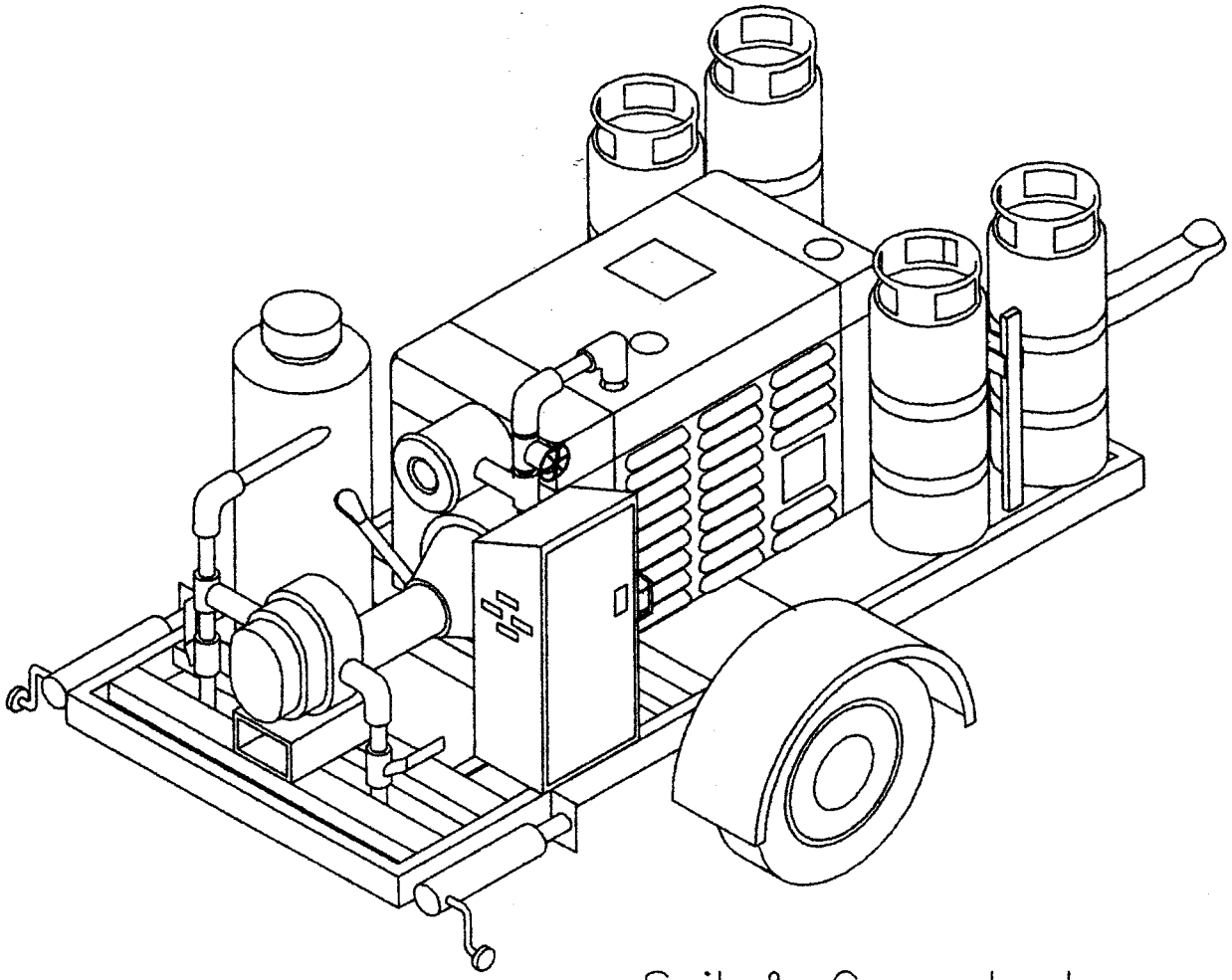


approximate scale in feet

0 15 30

Figure 2: Site map showing location of treatment system.

ENVIRONMENTAL ENGINEERING, INC.



Soil & Groundwater
Remediation Project
Former UST Site
440 Hearn Avenue
Santa Rosa, California

CEECON
CALIFORNIA ENVIRONMENTAL ENGINEERS & CONTRACTORS

Trailer–Mounted
Remediation
Engine

Drawing: RE–2 | Date:5/24/04

Figure 3 : Diagram of the I.C. Engine System located at
440 Hearn Avenue, Santa Rosa, CA

APPENDIX A

Air Discharge Permit

From

Bay Area Air Quality Management District

June 14, 2004

Former UST Site c/o SOMA Environmental
2680 Bishop Dr. Ste 203
San Ramon, CA 94583

Attention: Mr Mansour Sepehr

Application Number: **9874**
Plant Number: **16170**
Equipment Location:
440 Hearn Avenue
Santa Rosa, CA 95407

Dear Applicant:

This is your Authority to Construct the following:

S-1 **Soil Vapor Extraction System consisting of a 150 max scfm vacuum blower, and ancillary equipment, abated by A-1, SVE Abatement System, consisting of either an Internal Combustion Engine, or at least two (200 lb minimum capacity) Carbon Adsorption Vessels arranged in series**

The equipment described above is subject to condition no. **21508.**

Notification
Please contact your assigned Permit Engineer, listed in the correspondence section of this letter, by phone, by fax, or in writing at least three days before the initial operation of the equipment so that we may observe the equipment in operation and verify conformance with the Authority to Construct. Operation includes any start-up of the source for testing or other purposes. Operation of equipment without notification to the District may result in enforcement action. **Do not send start-up notifications to the Air Pollution Control Officer.**

Start-up Period
After receipt of the start-up letter required above, this Authority to Construct authorizes operation during the start-up period from the date of initial operation noted in your start-up letter until the Permit to Operate is issued, up to a maximum of 90 days. All conditions (specific or implied) of the Authority to Construct are in effect during the start-up period.

Fees
District Regulation 3 requires a fee for each new Permit to Operate. You will be invoiced upon receipt of your start-up letter. No permits will be issued until all outstanding fees are paid.

Implied Conditions
In the absence of specific permit conditions to the contrary, the throughputs, fuel and material consumption, capacities, and hours of operation described in your permit application will be considered maximum allowable limits. A new permit will be required before any increase in these parameters, or change in raw material handled, may be made.

Expiration
In accordance with Regulation 2-1-407, this Authority to Construct expires two years from the date of issuance unless substantial use of the authority has begun.

Confidentiality
Unless you have already designated specifically identified materials in your permit application as confidential, under the California Public Records Act, all data in your permit application, the permit itself and all permit conditions will be considered a matter of public record and may be disclosed to a third party. Please contact

conditions will be considered a matter of public record and may be disclosed to a third party. Please contact your permit reviewer immediately if you wish to amend your permit application submittals or to designate certain permit conditions as confidential. Unless we hear from you within ten (10) calendar days of this letter, except for materials which have been previously designated as confidential, you shall be deemed to have waived any claim of confidentiality with respect to all materials in the District's files relating to this permit application.

Right of Entry

The Air Pollution Control Officer of the Bay Area Air Quality Management District, the Chairman of the California Air Resources Board, the Regional Administrator of the Environmental Protection Agency, and/or their designees, upon presentation of credentials, shall be granted the right of entry to any premises on which an air pollution source is located for the purposes of:

A. The inspection of the source
B. The sampling of materials used at the source
C. The conduct of an emissions source test
D. The inspection of any records required by District rule or permit condition.

Correspondence

Please include you application number with any correspondence with the District. The District's regulations may be viewed online at www.baaqmd.gov If you have any questions on this matter, please call **Robert E. Cave, Air Quality Engineer at (415) 749-5048. Startup information may be faxed to the Engineering Division at 415-749-5030.**

Very truly yours,

Jack P. Broadbent
Executive Officer/APCO

by Scott Lutz
Engineering Division

SBL:REC: ry

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

COND# 21598

Ap. 9874; Pl. 16170; S-1, Soil Vapor Extraction System

1. Precursor Organic Compound (POC) emissions from Source S-1 shall be abated by A-1, SVE Abatement System, consisting of either an Internal Combustion Engine, or at least two (200 lbs minimum capacity) Activated Carbon Vessels arranged in series, during all periods of operation. Start-up and subsequent operation of each abatement device shall take place only after written notification of same has been received by the District's Permit Services Division. Soil vapor flow shall not exceed 150 scfm.
2. The POC abatement efficiency of Abatement Device A-1 shall be maintained at a minimum of 98.5% by weight for inlet POC concentrations greater than or equal to 2000 ppmv (measured as CS). For inlet concentrations below 2000 ppmv and greater than or equal to 200 ppmv, a minimum abatement efficiency of 97% shall be maintained. For inlet concentrations below 200 ppmv, a minimum abatement efficiency of 90% shall be maintained. The minimum abatement efficiency shall be waived if outlet POC concentrations are shown to be less than 10 ppmv (measured as CS). In no event shall Benzene emissions to the atmosphere exceed 0.020 pounds per day.
3. To determine compliance with Condition 2, during operation of the Internal Combustion Engine, the operator of this equipment shall:
   a. Analyze inlet gas stream to determine the flow rate and concentration of total POC present for each of the first three days of operation. Thereafter, the inlet gas shall be analyzed to determine the flow rate and concentration of POC once every 30 days.
   b. Analyze exhaust gas to determine the flow rate, and the concentration of Benzene and POC present for each of the first three days of operation. Thereafter, the exhaust gas shall be analyzed to determine the concentration of benzene and POC present once every 30 days.
   c. Calculate the Benzene emission rate in pounds per day based on the exhaust gas analysis and the operating exhaust flow rate. The soil vapor flow rate shall be decreased, if necessary, to demonstrate compliance with Condition 2.
   d. Calculate the POC abatement efficiency based on the inlet and exhaust gas analysis. For the purpose of determining compliance with condition 2, the POC concentration shall be reported as hexane.
   e. Submit to the District's Permit Services Division the test results and emission calculations for the first three days of operation within one month from start-up. Samples shall be analyzed according to modified EPA test methods 8015 and 8020 or their equivalent to determine the concentrations of POC and Benzene.
4. The operator of this source shall maintain the

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following information for each month of operation of the Internal Combustion Engine:

a. Days and hours of operation.
b. Inlet and exhaust flow rate.
c. Inlet and exhaust sampling date.
d. Analysis results.
e. Calculated POC abatement efficiency.
f. Calculated emissions of Benzene in pounds per day.

All measurements, records and data required to be maintained by the operator shall be retained and made available for inspection by the District for at least TWO years following the date the data is recorded.

5. During operation of the Activated Carbon Vessels, the operator of this source shall monitor with a photo-ionization detector (PID), flame-ionization detector (FID), or other method approved in writing by the Air Pollution Control Officer at the following locations:
   a. At the inlet to the second to last Carbon vessel in series.
   b. At the inlet to the last Carbon vessel in series.
   c. At the outlet of the Carbon vessel that is last in series prior to venting to the atmosphere.

   When using an FID to monitor breakthrough, readings may be taken with and without a Carbon filter tip fitted on the FID probe. Concentrations measured with the Carbon filter tip in place shall be considered methane for the purpose of these permit conditions.
6. These monitor readings shall be recorded in a monitoring log at the time they are taken. The monitoring results shall be used to estimate the frequency of Carbon change-out necessary to maintain compliance with conditions number 7 and 8, and shall be conducted on a daily basis. The operator of this source may propose for District review, based on actual measurements taken at the site during operation of the source, that the monitoring schedule be changed based on the decline in organic emissions and/or the demonstrated breakthrough rates of the carbon vessels. Written approval by the District's Permit Services Division must be received by the operator prior to a change to the monitoring schedule.
7. The second to last Carbon vessel shall be immediately changed out with unspent carbon upon breakthrough, defined as the detection at its outlet of the higher of the following:
   a. 10 % of the inlet stream concentration to the carbon bed.
   b. 10 ppmv (measured as C6).
8. The last Carbon vessel shall be immediately changed out with unspent Carbon upon detection at its outlet of 10 ppmv (measured as C6).
9. The operator of this source shall maintain the following information for each month of operation of the Activated Carbon Vessels:
   a. Hours and time of operation.
   b. Each emission test, analysis or monitoring results logged in for the day of operation they were taken.
   c. The number of Carbon vessels removed from service.

   Such records shall be retained and made available for

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inspection by the District for two years following the date the data is recorded.

10. Any non-compliance with these conditions shall be reported to the Compliance and Enforcement Division at the time that it is first discovered. The submittal shall detail the corrective action taken and shall include the data showing the exceedance as well as the time of occurrence.
11. The operator shall maintain a file containing all measurements, records and other data that are required to be collected pursuant to the various provisions of this conditional Authority to Construct/Permit to Operate. All measurements, records and data required to be maintained by the operator shall be retained for at least two years following the date the data is recorded.
12. Upon final completion of the remediation project, the operator of Source S-1 shall notify the Engineering Division within two weeks of decommissioning the operation.